an amorphous semiconductor material layer affixed to the non-conductive coating.

18 ~~53~~. (Amended) The device of claim ~~52~~ 17, wherein the substrate has a thickness of 0.0005 - 0.005 inches.

19 ~~54~~. (Amended) The device of claim ~~53~~ 18, wherein the metallic material comprises aluminum.

20 ~~55~~. (Amended) The device of claim ~~52~~ 17, wherein the coating has a thickness less than about 0.005 inches.

D2

56. (Amended) The device of claim 55, wherein the coating comprises an epoxy coating.

E

21 ~~57~~. (Amended) The device of claim ~~52~~ 17, wherein the semiconductor material comprises amorphous silicon oxide.

22 ~~58~~. (Amended) The device of claim ~~57~~ 21, wherein the amorphous silicon oxide is doped with an ion to increase conductivity.

23 ~~59~~. (Amended) The device of claim ~~52~~ 17, wherein the semiconductor material layer has a thickness of 1 - 5 microns.

25 ~~61.~~ (Amended) A device comprising:

a single substrate, the single substrate being of sufficient flexibility to undergo roll-type processing, the single substrate comprising an annealed, preshrunk polymeric material;

a surface morphology-improving coating affixed to a surface of the single substrate, wherein the coating is a non-conductive coating; and

an amorphous semiconductor material affixed to the coating.

26 ~~62.~~ (Amended) The device of claim 25 ~~61~~, wherein the polymeric material comprises one of a polyester, polycarbonate, and polyimide material.

D3

27 ~~63.~~ (Amended) The device of claim 25 ~~61~~, wherein the coating has a thickness less than about 0.005 inches.

28 ~~64.~~ (Amended) The device of claim 25 ~~61~~, wherein the semiconductor material comprises amorphous silicon oxide.

29 ~~65.~~ (Amended) The device of claim 28 ~~64~~, wherein the amorphous silicon oxide is doped with an ion to increase conductivity.

30 ~~66.~~ (Amended) The device of claim 25 ~~61~~, wherein the semiconductor material layer has a thickness of 1 - 5 microns.

24 ~~67~~. (Amended) The device of claim ~~52~~ 17, wherein the device comprises an electrochemical testing device, the device further comprising a reagent capable of reacting with an analyte to produce a measurable change in potential, and at least one electrode formed on the surface coating.

D4

31 ~~68~~. (Amended) The device of claim ~~61~~ 25, wherein the device comprises an electrochemical testing device, the device further comprising a reagent capable of reacting with an analyte to produce a measurable change in potential, and at least one electrode formed on the surface coating.

Please add new claims 69-83, as follows:

37 ~~69~~. (New) An electrochemical test device for determining the presence or concentration of an analyte in an aqueous fluid sample, said electrochemical test device comprising:

a substrate, the substrate consisting of a single layer of flexible material, the flexible material having sufficient flexibility to undergo roll-type processing;

D5

a non-conductive coating affixed to one side of the substrate;

a working electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said working electrode having a first electrode area, a first lead and a first contact pad;

a counter electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said counter electrode having a second electrode area, a second lead and a second contact pad; and

a reagent capable of reacting with the analyte to produce a measurable change in potential which can be correlated to the presence or concentration of the analyte in the fluid sample, said reagent overlaying at least a portion of the first electrode area of the working electrode.

33 32
~~70~~. (New) The device of claim ~~69~~, wherein the non-conductive coating has a thickness sufficient to fill surface valleys on the substrate.

34 33
~~71~~. (New) The device of claim ~~70~~, wherein the thickness is less than about 0.005 inches.

D5

35 32
~~72~~. (New) The device of claim ~~69~~, wherein the non-conductive coating comprises an epoxy coating.

36 32
~~73~~. (New) The device of claim ~~69~~, wherein the semiconductor material comprises amorphous silicon oxide.

37 36
~~74~~. (New) The device of claim ~~73~~, wherein the amorphous silicon oxide is doped with an ion.

38 75. (New) The device of claim 32, wherein the flexible material comprises a metallic foil having a thickness of 0.0005 - 0.005 inches.

39 76. (New) The device of claim 37, wherein the amorphous semiconductor material has a surface texture less than 0.33 microns.

40 77. (New) An electrochemical test device for determining the presence or concentration of an analyte in an aqueous fluid sample, said electrochemical test device comprising:

D5 a single substrate, the single substrate comprising a layer of flexible material, the flexible material having sufficient flexibility to undergo roll-type processing;

a non-conductive coating affixed to a side of the single substrate, the non-conductive coating having sufficient thickness to fill surface valleys of the single substrate thereby providing improved surface flatness relative to the substrate;

a working electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said working electrode having a first electrode area, a first lead and a first contact pad;

a counter electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said counter electrode having a second electrode area, a second lead and a second contact pad; and

a reagent capable of reacting with the analyte to produce a measurable change in potential which can be correlated to the presence or concentration of the analyte in the fluid

sample, said reagent overlaying at least a portion of the first electrode area of the working electrode.

41 ~~78~~. (New) The device of claim ~~77~~ 40, wherein the thickness of the non-conductive coating is less than about 0.005 inches.

42 ~~79~~. (New) The device of claim ~~77~~ 40, wherein the non-conductive coating comprises an epoxy coating.

D5

43 ~~80~~. (New) The device of claim ~~77~~ 40, wherein the semiconductor material comprises amorphous silicon oxide.

44 ~~81~~. (New) The device of claim ~~80~~ 43, wherein the amorphous silicon oxide is doped with an ion.

45 ~~82~~. (New) The device of claim ~~77~~ 40, wherein the flexible material comprises a metallic foil having a thickness of 0.0005 - 0.005 inches.

46 ~~83~~. (New) The device of claim ~~77~~ 40, wherein the amorphous semiconductor material has a surface texture less than 0.33 microns.